

In The Claims

Please amend the claims as follows:

- 1 1. (Previously presented) An integrated paper having active particles
- 2 immobilized therein, said integrated paper comprising of:
- 3       a plurality of fibers fibrillated at a temperature greater than about 30°C, wherein
- 4        said fibrillated fibers have an average fiber diameter of less than about 1000
- 5        nm;
- 6       active agents selected from the group consisting of metals, metal salts, metal
- 7        oxides, alumina, carbon, activated carbon, silicates, ceramics, zeolites,
- 8        diatomaceous earth, activated bauxite, fuller's earth, calcium sulfate,
- 9        titanium dioxide, magnesia, magnesium hydroxide, magnesium oxide,
- 10      manganese oxides, iron oxides, perlite, talc, clay, bone char, calcium
- 11      hydroxide, calcium salts, or combinations thereof; and
- 12     a microbiological interception enhancing agent on at least a portion of at least
- 13     some of said fibrillated fibers and/or said active agents, said microbiological
- 14     interception enhancing agent comprising a biologically active metal
- 15     precipitated with a counter ion of a cationic material that is residing on said
- 16     at least portion of said fibrillated fibers and/or said active agents to form a
- 17     colloidal metal precipitate on a surface of said at least portion of said
- 18     fibrillated fibers and/or said active agents,
- 19     wherein said integrated paper has a mean pore size of less than or equal to
- 20     about 2 microns.

1 2. (Original) An integrated paper of claim 1 wherein said fibrillated fibers  
2 comprise Lyocell.

1 3. (Previously presented) An integrated paper of claim 2 wherein the lyocell  
2 has an average fiber diameter of less than about 400 nm.

1 4. (Previously presented) An integrated paper of claim 1 wherein said active  
2 agents have an average particle size of less than or equal to about 1 micron to  
3 about 5000 microns.

1 5. (Original) An integrated paper of claim 1 wherein the average diameter of  
2 said fibrillated fibers is less than an average particle size of said active agents.

1 6. (Original) An integrated paper of claim 1 further including binder fibers or  
2 particles.

1 7. (Original) An integrated paper of claim 1 wherein said fibrillated fibers and  
2 said active agents have different settling velocities such that said integrated paper  
3 has an asymmetric structure when formed by wet-laid processes.

1 8. (Cancelled)

1 9. (Previously presented) An integrated paper comprising of:

2        a plurality of fibers fibrillated at a temperature greater than about 30°C, wherein  
3                said fibrillated fibers have an average fiber diameter of less than about 400  
4                nm;  
5        silver oxide particles admixed with said fibrillated fibers; and  
6        a microbiological interception enhancing agent on at least a portion of at least  
7                some of said fibrillated fibers, said microbiological interception enhancing  
8                agent comprising a biologically active metal precipitated with a counter ion  
9                of a cationic material that is residing on said at least portion of said fibrillated  
10          fibers to form a colloidal metal precipitate on a surface of said at least  
11          portion of said fibrillated fibers.

1    10. (Original) An integrated paper of claim 9 wherein the fibrillated fibers  
2        comprise a liquid crystal polymer.

1    11. (Previously presented) An integrated paper comprising of:  
2        a plurality of fibers fibrillated at a temperature greater than about 30°C, wherein  
3                said fibers have an average fiber diameter of less than about 400 nm;  
4        a microbiological interception enhancing agent on at least a portion of at least  
5                some of said fibrillated fibers, said microbiological interception enhancing  
6                agent comprising a biologically active metal precipitated with a counter ion  
7                of a cationic material that is residing on said at least portion of said fibrillated  
8                fibers to form a colloidal metal precipitate on a surface of said at least  
9                portion of said fibrillated fibers; and  
10        one or more acid neutralizing agents admixed with said fibrillated fibers;

11 wherein said integrated paper can withstand a hot and corrosive environment of a  
12 lube oil filter, and wherein said one or more acid neutralizing agents comprises  
13 magnesium oxide, magnesium hydroxide, calcium sulfonate, magnesium sulfonate,  
14 calcium phenate, magnesium phenate, or combinations thereof.

1 12. (Original) An integrated paper of claim 11 further including binder fibers or  
2 particles.

1 13. (Cancelled)

1 14. (Previously presented) An integrated paper comprising of:  
2 a plurality of lyocell fibers fibrillated at a temperature greater than about 30°C,  
3 wherein said fibrillated lyocell fibers have an average fiber diameter of less  
4 than or equal to about 400 nm;  
5 activated carbon particles admixed with said fibrillated lyocell fibers, wherein  
6 said integrated paper has a mean flow path of less than about 2 microns; and  
7 a microbiological interception enhancing agent on at least a portion of at least  
8 some of said fibrillated lyocell fibers, said microbiological interception  
9 enhancing agent comprising a biologically active metal precipitated with a  
10 counter ion of a cationic material that is residing on said at least portion of  
11 said fibrillated lyocell fibers to form a colloidal metal precipitate on a surface  
12 of said at least portion of said fibrillated lyocell fibers.

1 15. (Cancelled)

1 16. (Original) An integrated paper of claim 14 further including a heavy metal  
2 reducing agent.

1 17. (Previously presented) An integrated paper of claim 16 wherein the heavy  
2 metal reducing agent comprises particles of zeolite, silicate, or combinations thereof.

1 18. (Original) An integrated paper of claim 14 further including an arsenic  
2 reducing agent.

1 19. (Original) An integrated paper of claim 18 wherein the arsenic reducing  
2 agent comprises particles of iron, oxides of manganese or iron, or combinations  
3 thereof.

1 20. (Previously presented) An integrated paper comprising:  
2 a plurality of fibers having an average fiber diameter of less than about 1000  
3 nm;  
4 a lead reducing agent admixed with said plurality of fibers; and  
5 a microbiological interception enhancing agent on at least a portion of at least  
6 some of said fibers, said microbiological interception enhancing agent  
7 comprising a biologically active metal precipitated with a counter ion of a  
8 cationic material that is residing on said at least portion of said fibers to form  
9 a colloidal metal precipitate on a surface of said at least portion of said  
10 fibers,

11 wherein said integrated paper has a mean flow path of less than about 2 microns.

1 21. (Cancelled)

1 22. (Original) An integrated paper of claim 20 further including binder fibers or  
2 particles.

1 23. (Cancelled)

1 24. (Previously presented) An integrated paper of claim 20 further including a  
2 carbon block, wherein said integrated paper is wrapped around the carbon block.

1 25-40. (Cancelled)

1 41. (Cancelled)

1 42. (Previously presented) The integrated paper of claim 1 wherein said  
2 colloidal metal precipitate includes a silver-amine-halide complex.

1 43. (Previously presented) The integrated paper of claim 1 wherein said  
2 fibrillated fibers have an average diameter of less than or equal to 250 nm and a  
3 length of 1mm to about 8 mm.

1 44. (Previously presented) The integrated paper of claim 1 wherein said colloidal  
2 metal precipitate is physically trapped within a matrix of said cationic material.

1 45. (Previously presented) The integrated paper of claim 1 wherein said colloidal  
2 metal precipitate is bound to said cationic material.

1 46. (Previously presented) The integrated paper of claim 45 wherein said  
2 colloidal metal precipitate is bound to said cationic material by adsorption.

1 47. (Previously presented) The integrated paper of claim 45 wherein said  
2 colloidal metal precipitate is bound to said cationic material by electrostatic forces.